

at least one bobbin having a plurality of coils comprising at least one wound electrical conductor wherein the bobbin is attached to the radially extended projections of the stator;

a mounting bracket attached to the stator, wherein the mounting bracket rotatably supports the rotor shaft;

a main housing configured to conform to and encompass the stator, the rotor and the bobbin, the main housing including an end plate attachable to the mounting bracket to support the main housing, the main housing having a plurality of vent slots;

an impeller mounted to the rotor shaft for rotation with the rotor, wherein rotation of the impeller circulates air through the vent slots in the main housing to cool the motor; and

an end cap attachable to the main housing and configured to encompass the impeller.

REMARKS

Along with the amendment filed on January 17, 2001, the applicants also included a Revocation of Power of Attorney and Appointment of New Attorneys directing all correspondence to be sent to a new address. The present amendment was sent to the old address. Therefore, applicants request the Examiner to correct the mailing address in the present application.

In the Office Action of February 14, 2001, claims 26-32 and 34-39 were rejected under 35 USC §103(a) as being unpatentable over the Larsh U.S. Patent No. 1,939,399 in view of the Zimmermann U.S. Patent No. 2,981,196. Claim 33 was rejected under 35 USC §103(a) in view of the references applied to claim 32 above, and in further view of the Bright U.S. Patent No. 3,969,043.

By the present amendment, the claims have been amended to particularly point out and distinctly claim applicants' invention and to define subject matter clearly patentable over the applied references. Reconsideration of the substantive rejection of the claims in view of the foregoing claim amendments and the following arguments for allowance is respectfully requested.

Claims 26-31

In rejecting independent claim 26, the Examiner stated that the Larsh '399 reference taught all of the features of claim 26 except for the provision of a main housing having an aperture configured to conform to the shape of the motor assembly. For this provision, the Examiner cited the Zimmermann '196 reference. The applicants hereby object to the Examiner's interpretation of the Larsh '399 patent and the Zimmermann '196 patent as applied to independent claim 26.

Claim 26 defines a method including the step of providing a mounting bracket adapted to attach to the stator. In the Office Action, the Examiner identified the lugs 34 and 35 formed on the motor casing 2 of the Larsh '399 reference as corresponding to the mounting bracket required by claim 26. As clearly set forth in the Larsh '399 reference, the lugs 34 and 35 are configured to conform to the motor stator such that the motor stator rests upon the lugs and is loosely supported within the casing 2 totally independently of other connections or interlocking engagement with the casing (see page 2, lines 86-90). Thus, it is clear that the supporting lugs are not attached to the stator and thus do not conform to the mounting bracket required by claim 26.

Further, claim 26 includes the step of providing a main housing having an end plate adapted to attach to the mounting bracket. Thus, it is clear that claim 26 requires the main housing to be separate from the mounting bracket attached to the stator. In the Larsh '399 reference, the motor casing and the supporting lugs are formed as a unitary structure. Thus, it is impossible for the motor casing to include an end plate adapted to attach to the lugs, as required by independent claim 26.

Further, claim 26 requires the step of securing the end plate of the main housing to the mounting bracket such that the motor assembly is supported within the main housing. Thus, the mounting bracket attached to the stator functions as a point of attachment for the end plate of the main housing. As clearly illustrated in the Larsh '399 reference, the motor casing 2 does not include any structure similar to the end plate used to secure the main housing to the mounting bracket attached to the stator. Instead, the Larsh '399 reference teaches capturing the stator between the lugs 44 and 50 contained on the cover 43 and the lugs 34 and 35 contained on the motor casing.

For the above-identified reasons, the Larsh '399 reference does not teach or suggest, nor render obvious, the subject matter required by independent claim 26.

Likewise, the Zimmermann '196 reference cited by the Examiner does not teach or suggest any type of mounting bracket attachable to the stator that provides a point of attachment for the end plate of the main housing. Instead, the motor shown in the Zimmermann '196 reference is supported within the overall housing and does not include a mounting bracket attached to the stator. Therefore, the combination of the Zimmermann '196 reference with the Larsh '399 reference does not teach or suggest the use of a mounting bracket and the attachment of a main housing to the mounting bracket to support the motor assembly within the main housing.

As discussed in the present application, the use of the mounting bracket attached to the stator allows the housing to be attached to the motor assembly while creating an open area for air to flow between the housing and the motor assembly. Further, the mounting bracket allows the housing to be attached to the motor assembly in an efficient and effective manner that reduces the cost of assembly.

For these reasons, independent claim 26 is believed to be allowable over the references cited by the Examiner.

Dependent claims 27-31 depend directly or indirectly from claim 26 and are believed to be allowable for the above reasons, as well as in view of the subject matter of each claim.

Dependent claim 27 requires the step of providing a radially extended portion on the main housing to enclose at least the bobbin, where the radially extended portion includes vent slots through which air can flow to cool the motor assembly. In rejecting this claim, the Examiner stated that the Zimmermann '196 reference taught a radially extended portion as illustrated by reference numerals 43 and 40 in the Zimmermann '196 reference. Claim 27 requires the radially extended portion to include vent slots that allow air to flow therethrough to cool the motor. In the Zimmermann '196 reference, the openings 62 through which air flows are formed by the difference in the size between the cover 60 and the outer walls of the pump housing 20. Clearly, these openings are not formed on the radially extended portion of the main housing, as required by claim 27. Instead, the opening shown in the

Zimmermann '196 patent are spaced radially away from the bobbin such that air must flow through the openings and through a substantial portion of the housing before reaching the motor assembly. In the method of claim 26, the vent slots are formed in the radially extended portion such that air flows directly over the motor after passing through the vent slots.

Further, if the walls 43 and 40 of the Zimmermann '196 patent correspond to the radially extended portion, it is clear that these two components do not include vent slots as required by claim 26. Instead, the only place air can flow into the motor housing is through the openings 62 formed between the cover 60 and the housing 20. Therefore, the Zimmermann '196 reference does not teach or suggest, nor render obvious, the subject matter of claim 27.

Claim 30 requires the step of providing an end cap having a radially extended portion such that when the end cap is attached to the main housing, the radially extended portion encloses at least the bobbin. Clearly, this feature is not shown nor suggested, nor rendered obvious, by the Zimmermann '196 reference. In the Zimmermann '196 reference, the end cap 60 extends over the entire housing 20 and encloses the motor, the control chamber 29 and the flow chamber 28. Thus, the end cap shown in the Zimmermann '196 reference clearly does not include a radially extended portion that encloses at least the bobbin when attached to the main housing.

Claim 31 further includes the limitation that vent slots are formed in the radially extended portion of the end cap. Clearly, there are no vent slots formed in the end cap shown in the Zimmermann '196 reference. Further, since the end cap does not include a radially extended portion, the Zimmermann '196 reference clearly does not teach or suggest the subject matter of claim 31.

Claims 32-39

By the present amendment, claim 32 has been amended to indicate that the C-frame motor includes a mounting bracket attached to the stator and positioned to rotatably support the rotor shaft. Further, claim 32 has been amended to indicate that the main housing includes an end plate attachable to the mounting bracket to support the main housing.

As discussed above in the arguments for allowance for claim 26, neither the Larsh '399 reference or the Zimmermann '196 reference teach or suggest the use of a mounting bracket attached to the stator to which the end plate of the main housing is attached. For this reason, claim 32 is believed to be allowable over the cited references.

Dependent claims 34-39 depend directly or indirectly from claim 32 and are believed to be allowable for the above reasons, as well as in view of the subject matter of each claim.

Specifically, claim 35 requires the main housing to have a radially extended projection that includes vent slots through which air can flow. In the Zimmermann '196 reference, the radially extended projection, as defined by the Examiner to include the elements identified by reference numerals 40 and 43, clearly does not include any vent slot. Instead, the entire housing includes openings 62 formed between the cover 60 and the casing 20 which allow air to flow into the housing. Clearly, the Zimmermann '196 reference does not teach or suggest a radially extended projection that includes vent slots as required by claim 35.

Claims 37 and 38 require an end cap to include a radially extended projection that conforms to the shape of the radially extended projections of the stator and encompasses at least the bobbin when the end cap is attached to the main housing. In the Zimmermann '196 reference, the end cap does not include any radially extended projection that conforms to the radially extended projection of the stator. Instead, the end cap taught by the Zimmermann '196 reference fits over the entire enclosure including both the motor enclosure and the switch control chamber 29. As can be seen in the Zimmermann '196 reference, the enclosure of the bobbin does not depend on whether the end cap is attached to the pump housing or not. Therefore, it is clear that the end cap of the Zimmermann '196 reference does not encompass the bobbin as required by claim 37.

Claim 38 requires the radially extended projection of the end cap to include vent slots such that air can flow through the radially extended projection. Since the end cap in the Zimmermann '196 reference does not include the radially extended projection, it clearly cannot include vent slots as required by claim 38.

Therefore, claims 37 and 38 are believed to be allowable over the references cited by the Examiner.

Conclusion

By the present amendment, the applicants' attorney has made every effort to present claims 26-32, 34-39 in a form that is believed to be allowable over the references cited by the Examiner. Thus, applicants' attorney hereby requests passage of the claims to allowance.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Marked-Up Version of Claims".

The Examiner is invited to contact applicants' undersigned attorney with any suggestions or comments, or to otherwise facilitate prosecution.

Respectfully submitted,

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MARKED-UP VERSION OF CLAIMS

APPLICATION NO. 09/426,380

32. (Amended) A C-frame motor comprising:

a stator having a plurality of electrically conductive laminations, wherein the laminations have portions which define rotor apertures and portions which define radially extended projections;

a rotor having a plurality of laminations and sized to be rotatably received within the rotor apertures of the stator laminations, the rotor being rotatably mounted to a rotor shaft;

at least one bobbin having a plurality of coils comprising at least one wound electrical conductor wherein the bobbin is attached to the radially extended projections of the stator;

a mounting bracket attached to the stator, wherein the mounting bracket rotatably supports the rotor shaft;

a main housing configured to conform to and encompass the stator, the rotor and the bobbin, the main housing including an end plate attachable to the mounting bracket ~~to the stator~~ to support the main housing, the main housing having a plurality of vent slots;

an impeller mounted to the rotor shaft for rotation with the rotor, wherein rotation of the impeller circulates air through the vent slots in the main housing to cool the motor; and

an end cap attachable to the main housing and configured to encompass the impeller.